## ABSTRACT

A reactor core cooling structure of the present invention comprises cooling gas flow-in slits for making a cooling gas flow in a circular reactor core, which slits are provided at an outer graphite cylinder for covering an outside of the circular reactor core; cooling gas flow-out slits for making the cooling gas flow in a circular reactor core, which slits are provided at an inner graphite cylinder for covering an inside of the circular reactor core; a circular cooling gas flow path that is provided at an outside of the outer graphite cylinder, and is connected to an inlet piping of the cooling gas at a foot of the outer graphite cylinder; and an inner cooling gas flow path that is provided at an inside of the inner graphite cylinder, and is connected to an outlet piping of the cooling gas at a foot of the inner graphite cylinder.

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